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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,115	11/20/2003	Kenji Ogasawara	S004-5156	9887

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EXAMINER	
HINZE, LEO T	

ART UNIT	PAPER NUMBER
2854	

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/718,115	OGASAWARA, KENJI	
	Examiner	Art Unit	
	Leo T. Hinze	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 appears to be missing key words and/or phrases, resulting in confusing syntax that makes determination of the scope of the claim difficult. It appears that the applicant is attempting to claim that the light detecting regions in the second wheel are actually apertures, and that the light received by the light receiving device somehow travels through the apertures of the second wheel.

Appropriate correction and/or clarification is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 and 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Yiu, US 6,807,128 B2 (Yiu).

a. Regarding claims 1 and 12, Yiu teaches a timepiece comprising a hand position detecting device comprising:

a first hand wheel (20, Fig. 2);

a second hand wheel (30, Fig. 2) which is rotated in response to rotation of the first hand wheel so as to make one rotation as the first hand wheel makes an integral number of rotations ("wheel 20 which may be either a second, a minute", "wheel 30, which may also be either an hour wheel", col. 3, ll. 37-40; a minute wheel inherently turns 12 times as fast as an hour wheel);

a light-emitting device (41, Fig. 2) which is made to hit regions formed in the second hand wheel permitting light detection (33, Fig. 2) via an aperture (24, Fig. 2) formed in the first hand wheel to pass incident light, when the first hand wheel and the second hand wheel have reached given positions;

a light-receiving device (43, Fig. 2) to detect light made detectable from the regions permitting light detection;

wherein the second hand wheel has the plural regions (33, Fig. 2) permitting light detection, the regions being angularly unequally spaced from each other such that the light-receiving device receives the light made detectable when the second hand wheel is at plural intermediate rotational positions other than the given positions (see arrangement of multiple regions 33 on wheel 30, Fig. 2).

b. Regarding claim 2, Yiu also teaches wherein the regions of the second hand wheel permitting light detection are reflective surfaces ("reflective members 33", col. 4, l. 16) and the light made detectable is reflected light, and wherein the light-receiving device detects the reflected light reflected by the reflective surfaces via the aperture in the first hand wheel to pass reflected light ("reflect the light to the light receiving device 43", col. 4, ll. 16-17).

c. Regarding claim 3, Yiu also teaches wherein when the first and the second hand wheels have reached the given positions, the light from the light-emitting device is made to obliquely hit the reflective surfaces on the second hand wheel via the aperture in the first hand wheel to pass incident light, and wherein reflected light reflected by the reflective surfaces obliquely is detected by the light-receiving device via the aperture in the first hand wheel to pass reflected light (see arrangement of wheels 20, 30, aperture 24, reflective surface 33, and lines representing light emitted from 41 and light reflected to 43, Fig. 2).

d. Regarding claim 4, Yiu also teaches wherein the aperture to pass incident light and the aperture to pass reflected light consist of a common shared aperture (24, Fig. 2), when the first and the second hand wheels have reached the given positions, the light from the light-emitting device is made to hit the reflective surfaces on the second hand wheel substantially perpendicularly via the shared aperture in the first hand wheel, the shared aperture acting as the aperture to pass incident light, and reflected light reflected substantially perpendicularly at the reflective surfaces is detected by the light-receiving device via the shared aperture acting as the aperture in the first hand wheel to pass reflected light (see arrangement of wheels 20, 30,

aperture 24, reflective surface 33, and lines representing light emitted from 41 and light reflected to 43, Fig. 2).

e. Regarding claim 6, Yiu also teaches wherein the angular interval between the regions of the second hand wheel permitting detection is an integral multiple of an incremental rotation angle through which the second hand wheel rotates when the first hand wheel is rotated once ("arranged on the target wheel 30, and equally spaced for 15 degrees away from each other", col. 4, ll. 39-41; second wheel rotates .5 degrees for each rotation of the first wheel, 15/.5 = 30, and 30 is an integer).

f. Regarding claim 7, Yiu also teaches wherein the first hand wheel is a minute wheel, while the second hand wheel is an hour wheel ("wheel 20 which may be either a second, a minute", "wheel 30, which may also be either an hour wheel", col. 3, ll. 37-40).

g. Regarding claim 8, Yiu also teaches wherein the angular interval between the regions of the hour wheel permitting detection is an integral multiple of 30 degrees ("arranged on the target wheel 30, and equally spaced for 15 degrees away from each other", col. 4, ll. 39-41). The open transitional phrase "comprising" in claim 1 allows for elements in addition to those claimed, such that Yiu may contain additional reflective surfaces placed between those reflective surfaces placed 30 degrees from each other.

h. Regarding claim 9, Yiu also teaches wherein the hour wheel has four regions permitting detection including a reference position at which incident light from the light-emitting device is supplied as the light made detectable to the light-receiving device when the hour wheel is at a given position, the four regions being arranged in the direction of rotation, and wherein the

angular intervals between adjacent regions of the four regions permitting detection are 30 degrees, 60 degrees, 120 degrees, and 150 degrees ("arranged on the target wheel 30, and equally spaced for 15° away from each other", col. 4, ll. 39-41). The open transitional phrase "comprising" in claim 1 allows for elements in addition to those claimed, such that Yiu may contain additional reflective surfaces placed between those reflective surfaces placed at 30 degrees, 60 degrees, 120 degrees, and 150 degrees.

i. Regarding claim 10, Yiu also teaches wherein the hour wheel has four regions permitting detection including a reference position at which incident light from the light-emitting device is supplied as the light made detectable to the light-receiving device when the hour wheel is at a given position, the four regions being arranged in the direction of rotation, and wherein the angular intervals between adjacent reflective surfaces of the four regions permitting detection are 30 degrees, 60 degrees, 90 degrees, and 180 degrees ("arranged on the target wheel 30, and equally spaced for 15° away from each other", col. 4, ll. 39-41). The open transitional phrase "comprising" in claim 1 allows for elements in addition to those claimed, such that Yiu may contain additional reflective surfaces placed between those reflective surfaces placed at 30 degrees, 60 degrees, 90 degrees, and 180 degrees.

j. Regarding claim 11, Yiu also teaches a device capable of functioning in a manner such that after a first one of the regions permitting detection is detected by rotation of the hour wheel, the light-emitting device and the light-receiving device are once stopped from being driven, and wherein each time the hour wheel rotates for an hour, the light-emitting device and the light-receiving device are driven during a time taken to detect whether the light from the light-emitting

device is received by the light-receiving device or not in the rotational position. Yiu teaches using motors to drive the wheels (21, 31, col. 3, ll. 56-57), and as discussed above, teaches using reflected light to determine the position of the hand wheels. Therefore, Yiu is capable of performing all of the functions claimed. Claim 11 does not set forth further structural limitations.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu in view of Allgaier et al., US 5,231,612 (Allgaier).

Yiu teaches all that is claimed as discussed in the rejection of claim 1 above, except wherein the regions of the second hand wheel permitting light detection are light transmissive regions, the light made detectable is transmitted hole passed through the light transmissive regions of the second hand wheel, and the light-receiving device detects the transmitted hole from the light transmissive regions.

Allgaier teaches a position detection and correction mechanism for a timepiece including a first wheel (24, Fig. 1), a second wheel (22, Fig. 1), a light emitting device (32, Fig. 1), a light receiving device (33, fig. 1), apertures in the first and second wheel (24' and 22', respectively,

Fig. 1), and a reflective surface (35, Fig. 1). Allgaier also shows a third wheel (15, Fig. 1), and a fourth wheel (16, Fig. 1), each with apertures to let light pass.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Yiu wherein the regions of the second hand wheel permitting light detection are light transmissive regions, the light made detectable is transmitted hole passed through the light transmissive regions of the second hand wheel, and the light-receiving device detects the transmitted hole from the light transmissive regions, because Allgaier teaches that a person having ordinary skill could have multiple wheels with light transmissive regions, and a person having ordinary skill in the art would recognize that this would allow additional wheels such as seconds wheels and day/date wheels to be incorporated into a watch and correspondingly properly aligned by the light emitting and light detecting devices.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo T. Hinze whose telephone number is (571) 272-2167. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo T. Hinze
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18 July 2005

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